

## Claims

What is claimed is:

1. In a data access system, a method of providing an  
5 Internet Protocol (IP) address for a computer device, said  
method comprising:

*See  
ARP  
address  
resolution  
protocol*  
10 a) receiving a request from said computer device for an IP  
address at a subscriber side network terminal, wherein said  
computer is configured for operation on a wide area network,  
and wherein said request is in a format compatible with a wide  
area network;

b) translating the request from the format compatible with  
a wide area network into a local area network compatible  
request; and

5 c) obtaining an IP address for said computer device.

2. The method of claim 1 wherein the local area network  
compatible request is a dynamic host configuration protocol  
request.  
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3. The method described in claim 1 further characterized  
in that said computer device establishes a Point-to-Point  
protocol (PPP) session with said subscriber side network  
terminal connected to said computer device.  
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4. The method described in claim 1 wherein said request  
takes place within a point-to-point protocol session  
established between said computer device and said subscriber  
side network terminal.  
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5. The method described in claim 1 further characterized  
in that said subscriber side network terminal periodically  
renews an IP address lease for said IP address.

6. The method of claim 1 wherein said subscriber side terminal periodically renews said IP address lease for said IP address using Dynamic Host Configuration Protocol (DHCP) lease renewal packets.

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7. An apparatus for providing connectivity to the Internet over a high speed access network, said apparatus comprising:

a) a protocol stack for receiving a request from a computer device for an IP address, wherein said request is in a format compatible with a wide area network; and

b) a translator for translating said request from said format compatible with a wide area network into a local area network compatible request.

8. The apparatus of claim 7 wherein the local area network compatible request is a dynamic host configuration protocol (DHCP) request.

9. The apparatus of claim 7 wherein said apparatus supports a connection to a twisted wire pair network using xDSL transmission.

10. The apparatus of claim 7 wherein said apparatus supports a connection to a hybrid fiber coaxial cable network.

11. A method for use in a network environment for an assignment of Internet Protocol (IP) address, the method comprising:

a) establishing a local Point-to-Point Protocol (PPP) session between a computer device and a local network interface device to acquire an IP address for the computer device;

b) using a Dynamic Host Configuration Protocol (DHCP) between the local network interface device and a remote server to acquire the IP address; and

c) relaying said IP address to the computer device using a  
5 PPP-based message.

12. The method of claim 11 further comprising:

d) periodically sending from the local network interface device a lease renewal message to the server to renew the IP  
10 address.

13. A proxy method for a universal access mechanism to a broadband access system, the method comprising:

a) requesting a connection to a broadband access network  
5 through a network interface device from a Local Area Network (LAN)-attached device;

b) establishing a Point-to-Point Protocol Over Ethernet (PPPoE) connection to an access server connected to said broadband access network;

c) performing protocol encapsulation and de-encapsulation for relaying messages transmitted between the broadband access network and the LAN-attached device for the duration of the PPPoE connection.

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